

NON-PUBLIC?: N  
ACCESSION #: 9306180329  
LICENSEE EVENT REPORT (LER)

FACILITY NAME: PLANT EDWIN I. HATCH, UNIT 2 PAGE: 1 OF 5

DOCKET NUMBER: 05000366

TITLE: PERSONNEL ERROR RESULTS IN UNPLANNED INSERTION OF  
MANUAL  
SCRAM

EVENT DATE: 05/21/93 LER #: 93-005-00 REPORT DATE: 06/10/93

OTHER FACILITIES INVOLVED: DOCKET NO: 05000

OPERATING MODE: 1 POWER LEVEL: 065

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR  
SECTION:  
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:  
NAME: STEVEN B. TIPPS, MANAGER NUCLEAR TELEPHONE: (921) 367-7851  
SAFETY AND COMPLIANCE, HATCH

COMPONENT FAILURE DESCRIPTION:  
CAUSE: SYSTEM: COMPONENT: MANUFACTURER:  
REPORTABLE NPRDS:

SUPPLEMENTAL REPORT EXPECTED: NO

#### ABSTRACT:

On 5/21/93 at 1939 CDT, Unit 2 was in the Run mode at a power level of 1581 CMWT (approximately 65 percent of rated thermal power). At that time, licensed Operations personnel were performing surveillance procedure 34SV-C71-005-2S, "TURBINE CONTROL VALVE FAST CLOSURE INSTRUMENT

FUNCTIONAL TEST." This procedure tests the "RPT" logic which causes a trip of the Reactor Recirculation Pumps in the event of a Main Turbine trip above 30 percent power. The procedure requires opening a test switch to disable the RPT trip while each Main Turbine Control Valve (TCV) is cycled. Per the procedure, the licensed operator should have disabled the "A" logic using the "A" test switch. Instead, he mistakenly moved the "B" test switch, disabling the "B" logic which was not being

tested and leaving the "A" logic active. Subsequently, when the TCV in the "A" logic channel was closed per the procedure, the RPT logic was satisfied, and both Reactor Recirculation pumps tripped per design. Licensed operators immediately inserted a manual scram as required. Reactor water level decreased following the scram as expected, producing a second scram signal and closure of the Group 2 Primary Containment Isolation System valves. Water level was restored from a low point of 161 inches above the top of active fuel by the Reactor Feedwater Pumps. No Emergency Core Cooling Systems injected, nor were any required to do so. The cause of this event is a personnel error on the part of a licensed operator. Specifically, he manipulated the wrong test switch while performing a surveillance. Subsequent movement of the TCV being tested completed the logic required to produce a trip of the Recirculation Pumps. Corrective actions for this event included temporarily removing the involved operator from licensed duties and subjecting him to formal discipline under the Company's Positive Discipline Program.

END OF ABSTRACT

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#### PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor  
Energy Industry Identification System codes are identified in the text as (EIIIS Code XX).

#### DESCRIPTION OF EVENT

On 5/21/93 at 1939 CDT, Unit 2 was in the Run mode at a power level of 1581 CMWT (approximately 65 percent of rated thermal power). At that time, licensed Operations personnel were performing surveillance procedure 34SV-C71-005-2S, "TURBINE CONTROL VALVE FAST CLOSURE INSTRUMENT

FUNCTIONAL TEST." The purpose of this surveillance is to test the control logic which produces a Reactor Recirculation Pump (EIIIS Code AD) trip should the Main Turbine (EIIIS Code TA) Control Valves (TCVs) close when reactor power is greater than 30 percent. This circuitry is referred to as Recirculation Pump Trip or "RPT" logic. Both TCVs in the same logic channel must close to actuate the RPT logic and trip the Reactor Recirculation Pump breakers. During testing, a test switch in the logic is opened per procedure 34SV-C71-005-2S to prevent an RPT trip signal from actuating the Reactor Recirculation Pump breakers. The first TCV closure signal is then simulated by installing a jumper in the RPT logic. The second TCV closure signal is generated by closing the other TCV in

the same logic channel until contacts in the RPT logic close and produce annunciation in the Main Control Room. Once proper circuit response is demonstrated, the TCV is allowed to reopen, the circuit is restored to its normal configuration and the test proceeds to the next TCV.

In this event, the first TCV was successfully tested. When the licensed operator performing the procedure began testing the second TCV, he mistakenly moved the "B" logic test switch rather than the "A" switch as he should have. This action disabled the RPT logic in a channel which was not being tested and left active the logic which was about to be tested. Next, the jumper was installed properly, simulating the signal produced by closure of one TCV in the "A" logic channel. When the other TCV in the "A" logic was closed at 1939 CDT, the combination of the jumper and the closed TCV completed the required logic, tripping the Reactor Recirculation Pumps.

When licensed personnel observed that both Reactor Recirculation Pumps had tripped, they immediately initiated a manual scram as required by Unit 2 Technical Specifications section 3.4.1.1 Action statement a. Following the scram, reactor water level decreased from its normal setpoint of 38 inches above instrument zero due to void collapse from power reduction, and reached the setpoint for the low reactor water level scram and the Group 2 Primary Containment Isolation System (PCIS, EIIS Code JM) isolation. As expected, another scram signal occurred on low water level and all Group 2 valves closed as required. Reactor water level was recovered by the Reactor Feedwater Pumps (EIIS Code SJ). No Emergency Core Cooling Systems injected to the vessel, nor were any required to do so. The lowest water level observed during the event was three inches above instrument zero, or approximately 161 inches above the

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top of active fuel. Reactor pressure was controlled using the Main Turbine Bypass Valves (EIIS Code SO). No Safety Relief Valves lifted, nor were any required to lift.

#### CAUSE OF EVENT

The root cause of this event was a personnel error on the part of a licensed plant operator. When performing the surveillance, the operator should have moved the "A" logic test switch to prevent a trip of the breakers for the Reactor Recirculation Pumps. However, he mistakenly moved the "B" switch. This disabled the RPT logic in a circuit which was not being tested and left active the RPT logic which was being tested. Therefore, when the jumper was installed simulating one TCV closure and the other TCV in the same logic channel was actually closed, the logic

conditions for an RPT actuation were satisfied in the active circuit and the Recirculation Pumps tripped per design. Since reactor operation without forced recirculation is not permitted, licensed personnel immediately inserted a manual scram signal as required by the plant's Technical Specifications.

## REPORTABILITY ANALYSIS AND SAFETY ASSESSMENT

This event is reportable per 10 CFR 50.73(a)(2)(iv) because a condition occurred which resulted in an unplanned manual actuation of the Reactor Protection System. Specifically, when licensed personnel observed that both Reactor Recirculation Pumps had tripped, they initiated a manual scram. The manual scram was followed by a second scram signal and a Group 2 PCIS valve actuation on low reactor water level.

The Turbine Control Valves are designed to control steam flow to the Main Turbine, thereby controlling reactor pressure during normal power operation. In the event of a trip of the Main Turbine, the TCVs automatically close. Pressure sensors in the Electrohydraulic Control System (EHS Code JJ) for the Main Turbine sense TCV position and send signals into the trip logic for the Reactor Recirculation Pumps, commonly called RPT logic. The purpose of the RPT function is to assist the scram function in rapidly reducing reactor power to protect against the pressure and power transients that result from a trip of the Main Turbine. This provides additional margin to core thermal limits in addition to that provided by the scram function alone, particularly when the core is nearing the end of a fuel cycle. The RPT logic fed by the TCVs is two-out-of-two logic, requiring both valves in a trip system to be closed in order to produce an actuation. In accordance with Unit 2 Technical Specifications table 4.3.9.2.1-1, the TCV pressure switches are functionally tested monthly to ensure this trip function is operable. To facilitate testing, a switch in the logic provides the capability to prevent trip signals from actually tripping the Reactor Recirculation Pump breakers.

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The Reactor Protection System is designed to produce a reactor scram signal when process conditions indicate that such is necessary. Among the many process conditions which can produce a scram signal is a low reactor water level of 12.3 inches above instrument zero.

The Primary Containment Isolation System is designed to isolate the Primary Containment by closing valves in pipes which penetrate the Containment to prevent radioactive materials from escaping. The PCIS valves are divided by design into several groups. Group 2 PCIS valves

are typically those valves in lines which penetrate the Primary Containment and communicate with the free air space inside it without directly communicating with the nuclear steam supply system. One of the signals designed to produce an isolation of Group 2 PCIS valves is a low reactor water level of 12.3 inches above instrument zero, or the same setpoint as the RPS actuation on low reactor water level.

In this event, a licensed plant operator moved a test switch, disabling an RPT logic channel which was not being tested. This left active the other RPT logic channel which was about to be tested. Thus the RPT logic being tested was still able to produce an actual trip of the Recirculation Pump breakers. Therefore, when the jumper was installed simulating one TCV closure and the other TCV in the same logic channel was closed per the procedure, the logic for a trip of the Recirculation Pump breakers was satisfied, and the breakers tripped as designed. This logic functioned as designed given the signal which was introduced when the jumper was installed and the TCV was closed. Other than the trip itself, no off-normal conditions were observed. Reactor water level decreased as expected due to void collapse resulting from rapid power reduction following the scram and reached the trip setpoint of RPS and the Group 2 PCIS. Consequently, a second scram signal was produced and the Group 2 PCIS valves closed as required. Had a design basis accident (DBA) occurred during this event, the affected systems would already have assumed the configurations assumed in the plant's accident analyses. No further automatic responses involving these systems would have been required to mitigate the consequences of a postulated DBA.

Based on this analysis, it is concluded that this event had no adverse impact on nuclear safety. This analysis is applicable to all power levels.

## CORRECTIVE ACTIONS

Corrective actions for this event included temporarily removing the involved licensed plant operator from duties requiring a reactor operator's license and subjecting him to formal discipline under the Company's Positive Discipline Program.

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## ADDITIONAL INFORMATION

1. Other Affected systems: No systems other than those mentioned in this report were affected by this event.
2. Previous Similar Events: Events reported in the past two years in

which licensed personnel committed errors resulting in a scram are described in the following LERs:

50-321/1992-009, dated 04/23/92

50-366/1992-009, dated 07/24/92

50-366/1992-026, dated 12/21/92

Corrective actions for these events included counseling involved personnel, revising procedures, expanding the utilization of equipment danger tags, reviewing the alarm function on Main Turbine vibration, and repairing equipment. These corrective actions could not have prevented this event due to the nature of the personnel error which led to this event. That is, no factors involving equipment labeling, equipment function, or procedural controls were identified as having contributed to this event.

3. Failed Components Information: No failed components contributed to or resulted from this event.

ATTACHMENT 1 TO 9306180329 PAGE 1 OF 1

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Georgia Power

J. T. Beckham, Jr.  
Vice President - Nuclear  
Hatch Project the southern electric system

June 10, 1993

Docket No. 50-366 HL-3339  
005610

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555

Edwin I. Hatch Nuclear Plant - Unit 2  
Licensee Event Report  
Personnel Error Results in  
Unplanned Insertion of Manual Scram

Gentlemen:

In accordance with the provisions of 10 CFR 50.73 (a)(2)(iv), Georgia Power Company is submitting the enclosed Licensee Event Report (LER) concerning a personnel error which resulted in an unplanned insertion of a manual scram. This event occurred at Plant Hatch - Unit 2.

Sincerely,

J. T. Beckham, Jr

JKB/cr

Enclosure: LER 50-366/1993-005

cc: Georgia Power Company  
Mr. H. L. Sumner, General Manager - Nuclear Plant  
NORMS

U.S. Nuclear Regulatory Commission, Washington, D.C.  
Mr. K. Jabbour, Licensing Project Manager - Hatch

U.S. Nuclear Regulatory Commission, Region II  
Mr. S. D. Ebnetter, Regional Administrator  
Mr. L. D. Wert, Senior Resident Inspector - Hatch

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